CLAIMS

1. A gas-discharge lamp inverter for use in a direct current distribution lighting system, said inverter having an arc suppressing feature for suppressing the arc in an electrically connected switch, comprising:

at least two power connecting points for electrically connecting a direct current power source, said power connecting points including a positive point and a negative point;

at least two output connecting points for providing an alternating current;

an oscillating drive circuit for producing the alternating current at the output connecting points, the alternating current produced being suitable for driving at least one ballast and at least one gas-discharge lamp in combination;

a constant current component capable of providing or sinking a constant current to said oscillating drive circuit when the inverter is energized by power provided at said power connecting points;

whereby the inverter has an arc suppressing characteristic, that arc suppressing characteristic providing arc suppression for both energizing and de-energizing events.

2. The inverter of claim 1, wherein the inverter comprises:

a biasing component providing clamping across said power connecting points, such that said positive point is prevented from having a substantial negative potential relative to said negative point after a de-energizing event.

3. The inverter of claim 1, wherein the inverter comprises:

an inductive component electrically connected in series with said oscillating drive circuit,, said inductive component configured to reduce in-rush current to the oscillating drive circuit at the time of inverter energizing;

a capacitive component in series with a resistive component, both electrically connected to said positive point and said negative point, whereby the capacitive component may receive a charge through said resistive componentat a controlled rate when said inverter is energized;

a biasing component connected to said capacitive component controlling the discharge of the capacitive component, said biasing component configured such that a charge is delivered to said inductive componentat the time of inverter de-energizing.

4. The inverter of claim 3, wherein the inverter comprises a second biasing component providing clamping across said power connecting points, such that said positive point is prevented from having a substantial negative potential relative to said negative point after a de-energizing event.

5. The inverter of claim 3 having reduced radio emissions, wherein:

the oscillating drive circuit includes a plurality of inductive components, said inductive components having a common connection point;

and wherein the common connection point is coupled to ground through a connection from the common connection of the switched inductors to an AC ground at frequencies near the drive frequency and significant harmonics.

6. A system according to claim 1, further comprising:

a switch electrically connected to at least one power connecting point, said switch configured to provide interruption and control of current to said inverter such that said inverter may be energized and de-energized;

and wherein said inverter comprises means for slowing the rate of voltage drop at said positive point to an effective amount to prevent arcing in said switch when said switch is opened.

7. A system according to claim 6, wherein said inverter further comprises means for preventing the voltage of said positive point from dropping substantially below the voltage of said negative point when said switch is opened.

8. An inverter according to claim 1, wherein the oscillating drive circuit comprises:

three switching components;

three inductive components controllable by said switching components, said inductive components configured to produce three phase output; and

three output points forming an electrical connectable feature for providing the three phase output.

9. A system according to claim 1, further comprising:

a plurality of fixtures, each of said fixtures locally connected to at least one ballast, each of

said fixtures further including provision for mounting at least one gas discharge lamp; and

wherein at least one of said inverters is connected to drive a plurality of said ballasts.

10. A system according to claim 1, further comprising a lighting fixture attached to said inverter, said lighting fixture having a ballast, said lighting fixture further having mountings whereby a number of gas-discharge lamps may be connected to said ballast, wherein:

said inverter is of a compact size suitable for attachment to said lighting fixture; and

said inverter is capable of driving the ballast in combination with a full set of connected lamps and at least one ballast of a separate fixture.

11. A fluorescent lighting system utilizing a direct current distribution system, the lighting system having arc suppression for long switch life, the system comprising:

a source of direct current power;

at least one lighting circuit, each lighting circuit comprising a switch and at least one inverter, further in each circuit the switch being electrically connected to each of said inverters to interrupt and control the power to the inverters such that the inverters may be energized and de-energized, each of said inverters comprising (i) a direct current input, (ii) an alternating current output, (iii) an oscillating drive circuit for producing the alternating current at the inverter output, the alternating current produced being suitable for driving at least one ballast and at least one gas-discharge lamp in combination, and (iv) a constant current component capable of providing or sinking a constant current to said oscillating drive circuit when said inverter is energized by power provided at said inverter input, whereby each of said inverters has an arc suppressing characteristic, that arc suppressing characteristic providing arc suppression for both energizing and de-energizing events; and

a distribution network distributing the direct current power from said source to each of said lighting circuits.

12. The system of claim 11, wherein each inverter comprises:

a biasing component providing clamping across said power connecting points, such that said positive point is prevented from having a substantial negative potential relative to said negative point after a de-energizing event.

13. The system of claim 11, wherein each inverter comprises:

an inductive component electrically connected in series with said oscillating drive circuit, said inductive component configured to reduce in-rush current to the oscillating drive circuit at the time of inverter energizing;

a capacitive component in series with a resistive component, both electrically connected to said positive point and said negative point, whereby the capacitive component may receive a charge through said resistive componentat a controlled rate when said inverter is energized;

a biasing component connected to said capacitive component controlling the discharge of the capacitive component, said biasing component configured such that a charge is delivered to said inductive component at the time of inverter de-energizing.

14. The system of claim 12, wherein each inverter comprises:

a second biasing component providing clamping across said power connecting points, such that said positive point is prevented from having a substantial negative potential relative to said negative point after a de-energizing event.

15. A system according to claim 11, wherein each of said inverters comprises means for slowing the rate of voltage drop at said positive point to an effective amount to prevent arcing when one of said switches is opened.

16. A system according to claim 15, wherein each of said inverters further comprises means for preventing the voltage of said positive point from dropping substantially below the voltage of said negative point when said inverter is de-energized.

17. A system according to claim 11, wherein at least one oscillating drive circuits comprises:

three switching components;

three inductive components controllable by said switching components; and

three output points forming an electrical connectable feature for providing three phase output.

18. A system according to claim 11, further comprising:

at least one ballast connected to one of said inverters, each of said ballasts configured to provide a substantially constant Q to said inverters, wherein the Q as seen by the inverter does not

depend on the number of said ballasts connected.

19. A system according to claim 11, further comprising an alternative direct current power source.

20. A system according to claim 11, wherein said source of direct current power comprises a rectifier, said rectifier capable of receiving at the input three phase power.